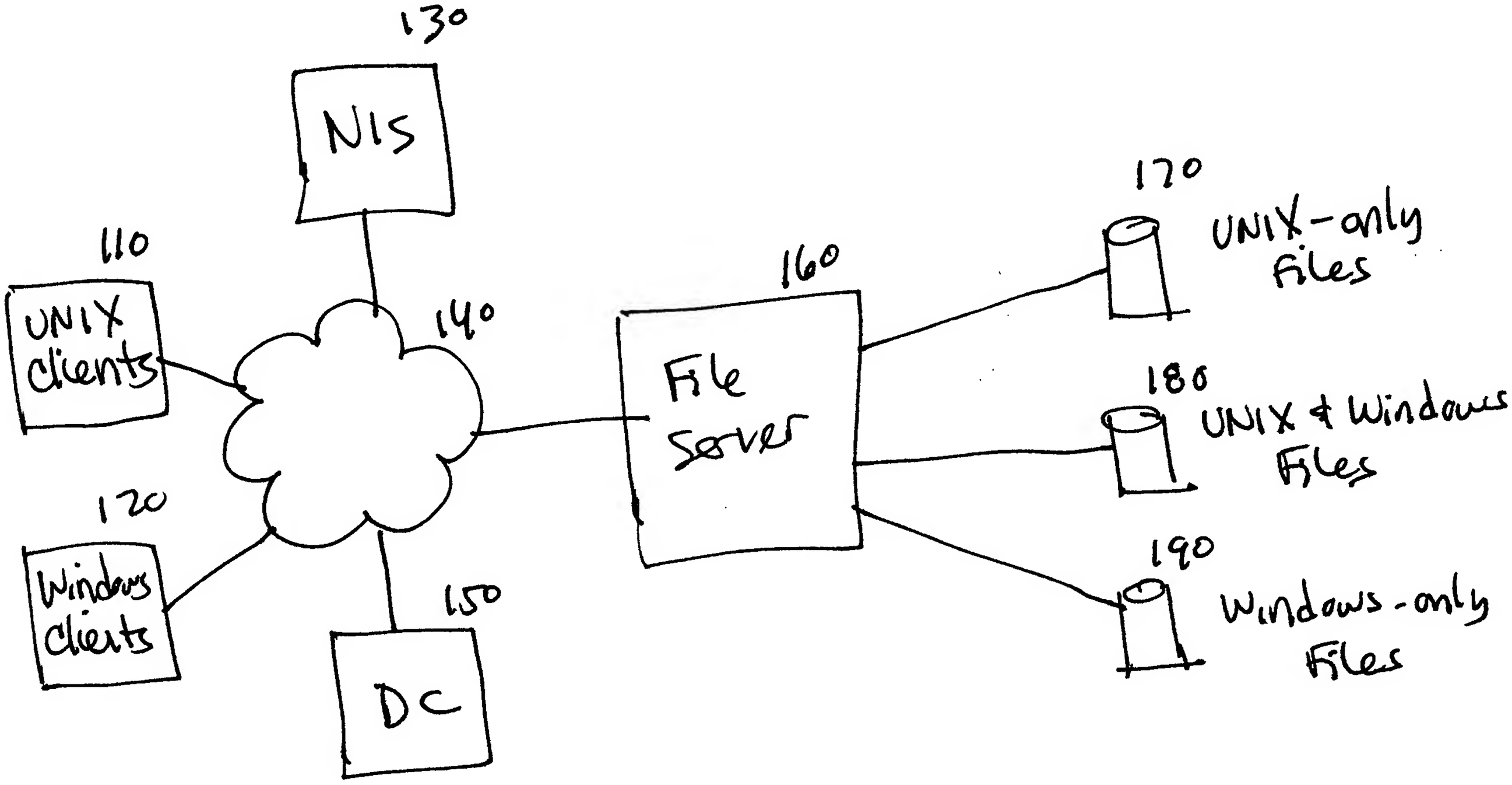
130
NIS
110
UNIX clients
140
120
Windows clients
150
DC
160
File Server
170
UNIX-only files
180
UNIX & Windows files
190
Windows-only files

FIG. 1 100

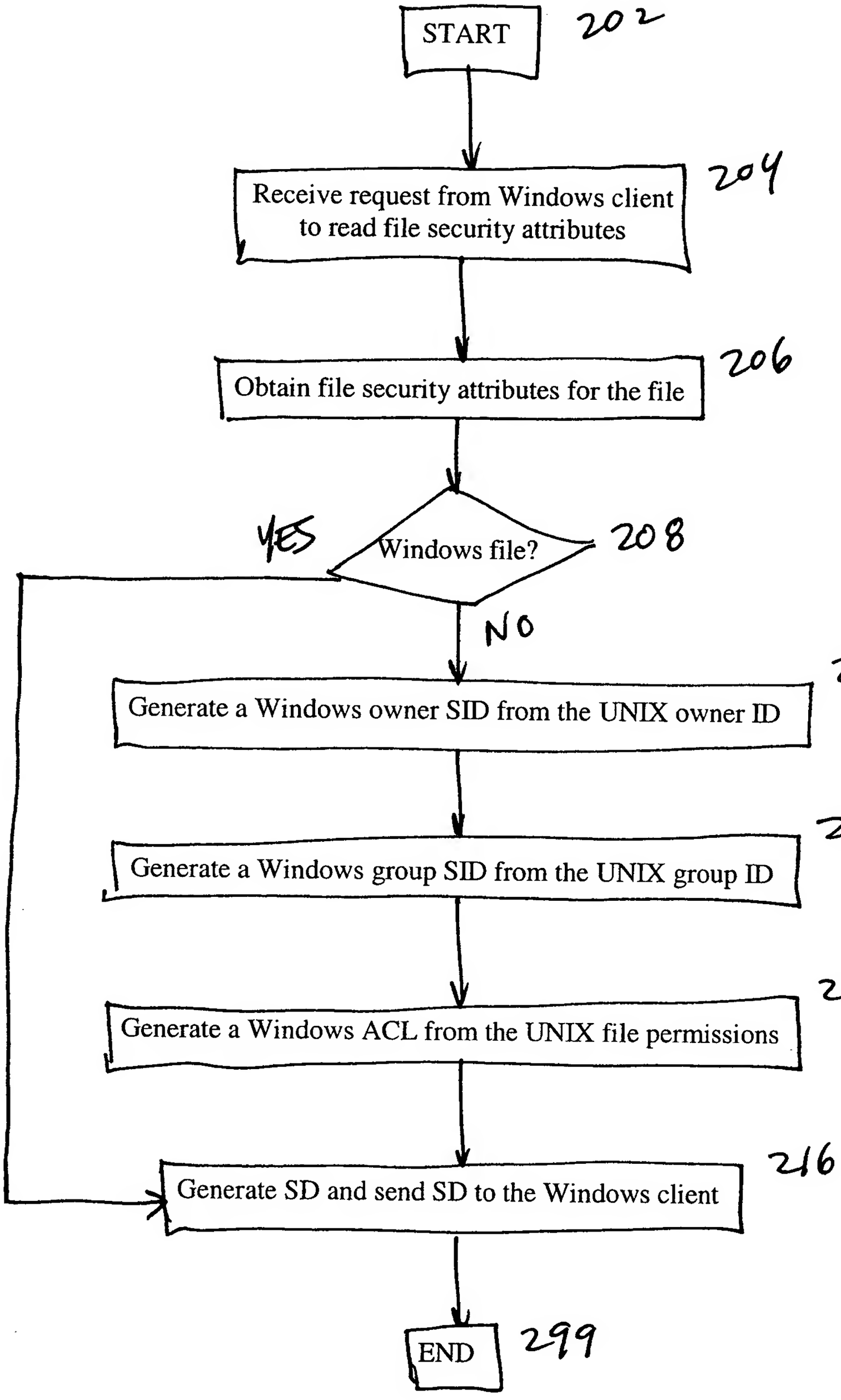
START
202
Receive request from Windows client to read file security attributes
204
Obtain file security attributes for the file
206
Windows file?
208
YES
NO
Generate a Windows owner SID from the UNIX owner ID
210
Generate a Windows group SID from the UNIX group ID
212
Generate a Windows ACL from the UNIX file permissions
214
Generate SD and send SD to the Windows client
216
END
299

FIG. 2 200

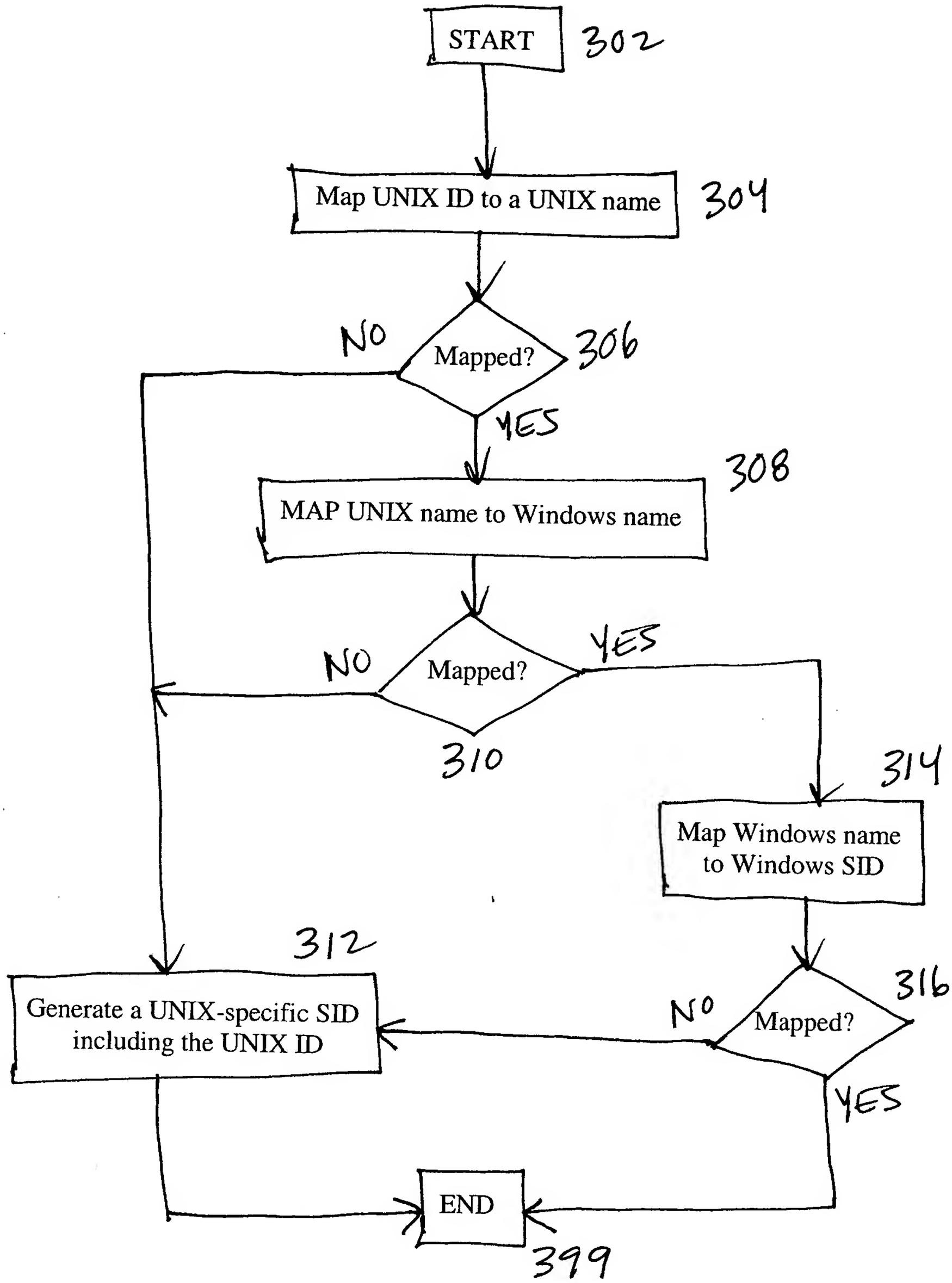
START
302
Map UNIX ID to a UNIX name
304
Mapped?
306
NO
YES
MAP UNIX name to Windows name
308
Mapped?
NO
YES
310
Map Windows name to Windows SID
314
Generate a UNIX-specific SID including the UNIX ID
312
Mapped?
316
NO
YES
END
399

FIG. 3 300

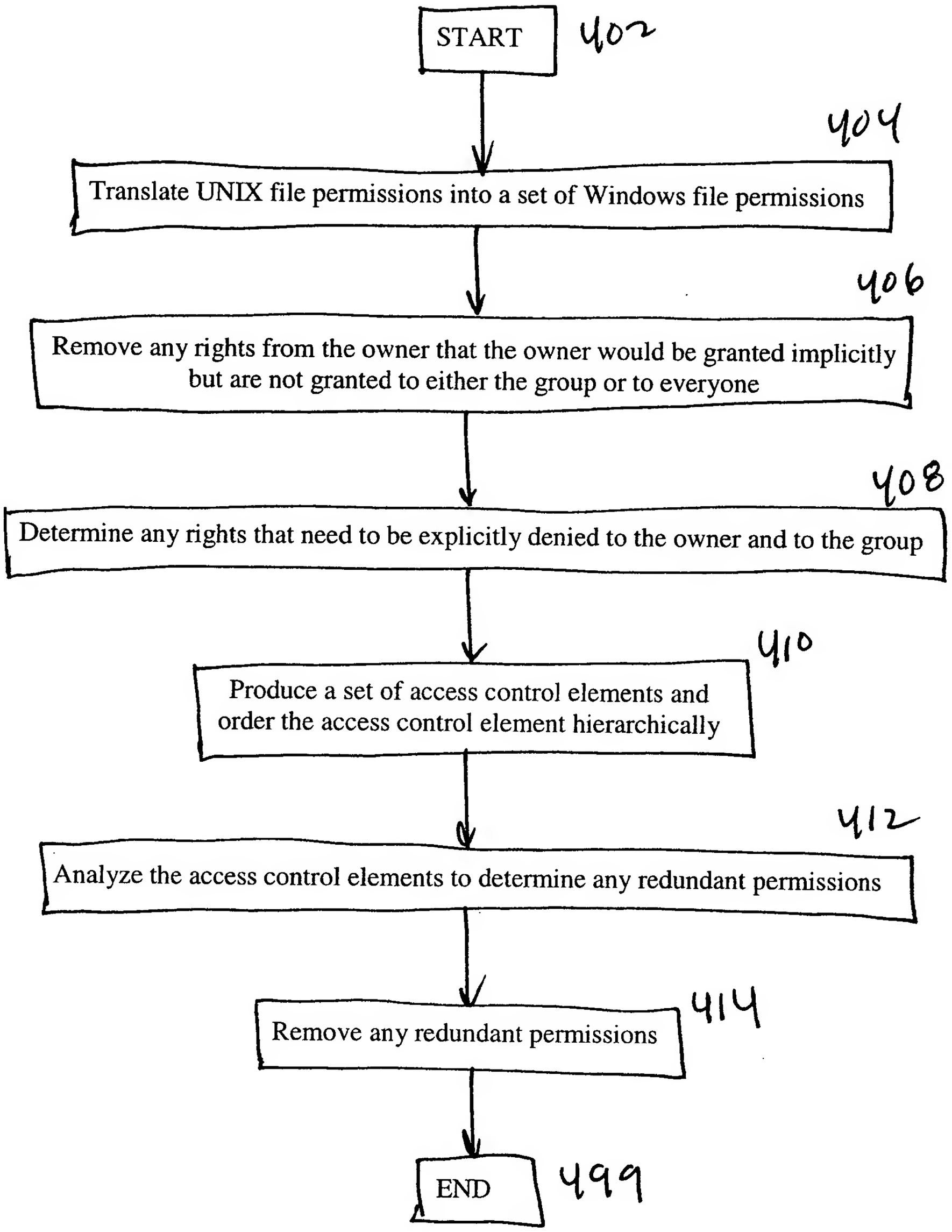
START
402
404
Translate UNIX file permissions into a set of Windows file permissions
406
Remove any rights from the owner that the owner would be granted implicitly but are not granted to either the group or to everyone
408
Determine any rights that need to be explicitly denied to the owner and to the group
410
Produce a set of access control elements and order the access control element hierarchically
412
Analyze the access control elements to determine any redundant permissions
414
Remove any redundant permissions
END
499

FIG. 4 400

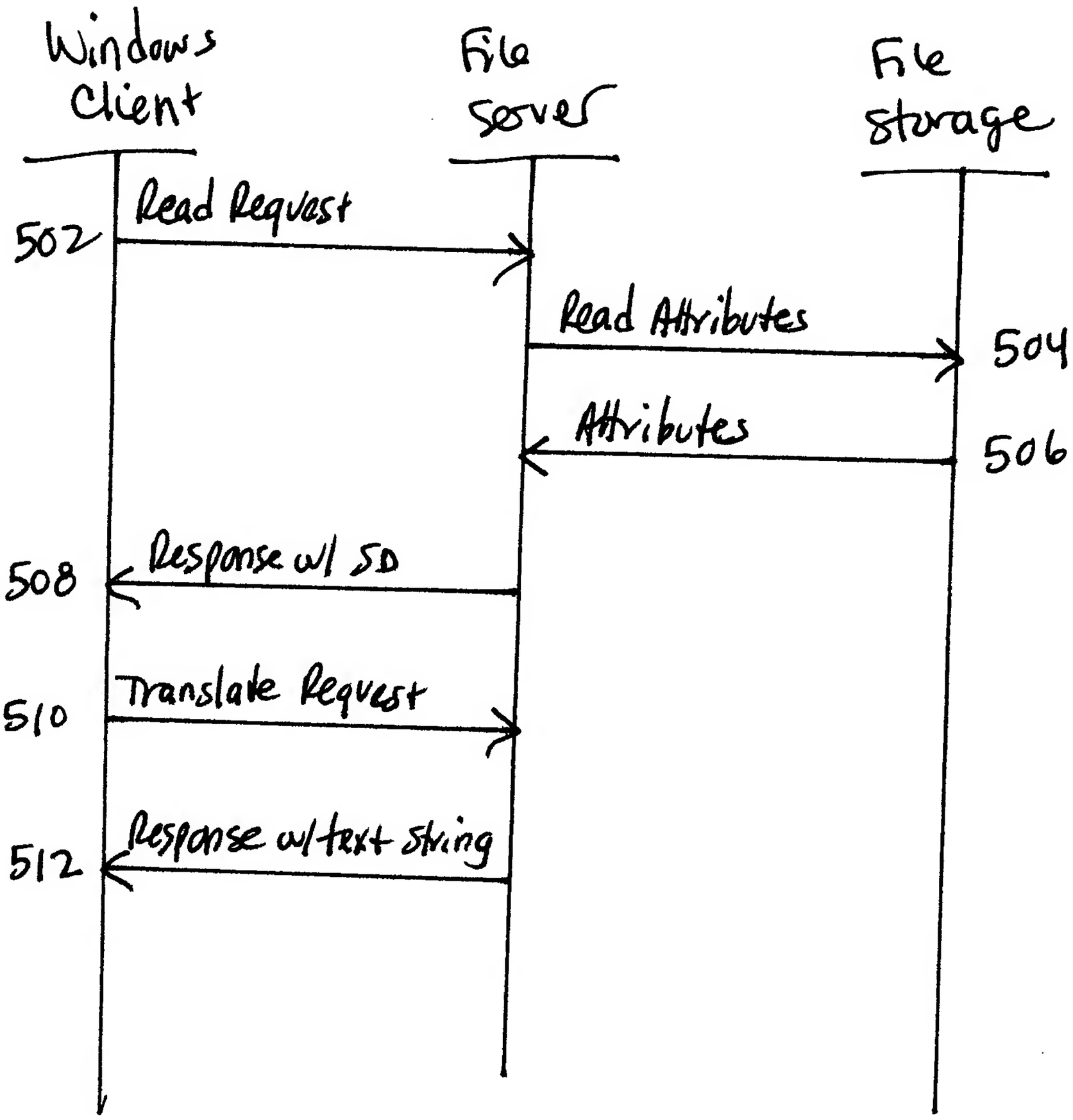
Windows Client
File Sever
File storage
Read Request
502
Read Attributes
504
Attributes
506
Response w/ SD
508
Translate Request
510
Response w/ text string
512

FIG. 5

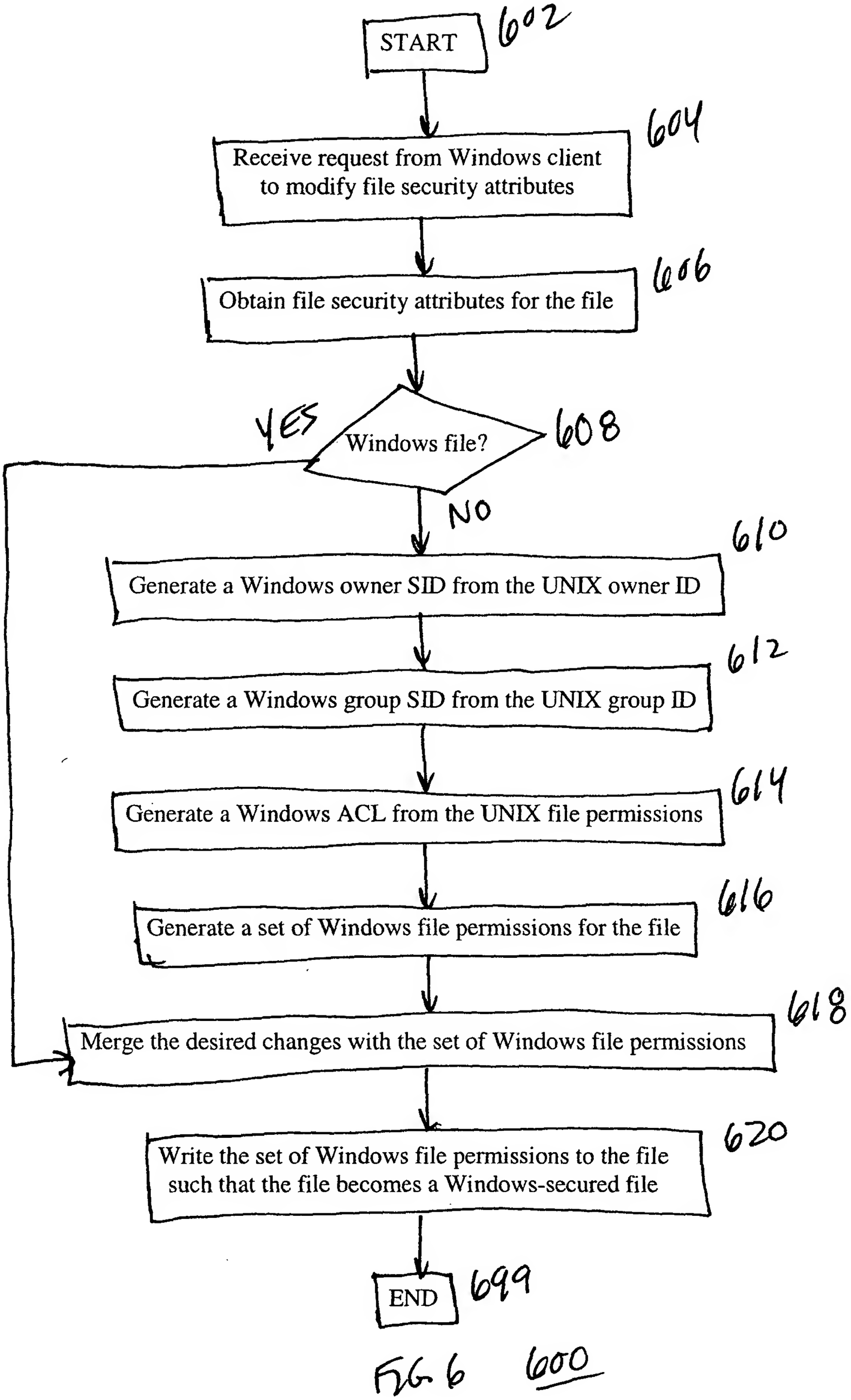
START
602
Receive request from Windows client to modify file security attributes
604
Obtain file security attributes for the file
606
YES
Windows file?
608
NO
Generate a Windows owner SID from the UNIX owner ID
610
Generate a Windows group SID from the UNIX group ID
612
Generate a Windows ACL from the UNIX file permissions
614
Generate a set of Windows file permissions for the file
616
Merge the desired changes with the set of Windows file permissions
618
Write the set of Windows file permissions to the file such that the file becomes a Windows-secured file
620
END
699

FIG. 6 600

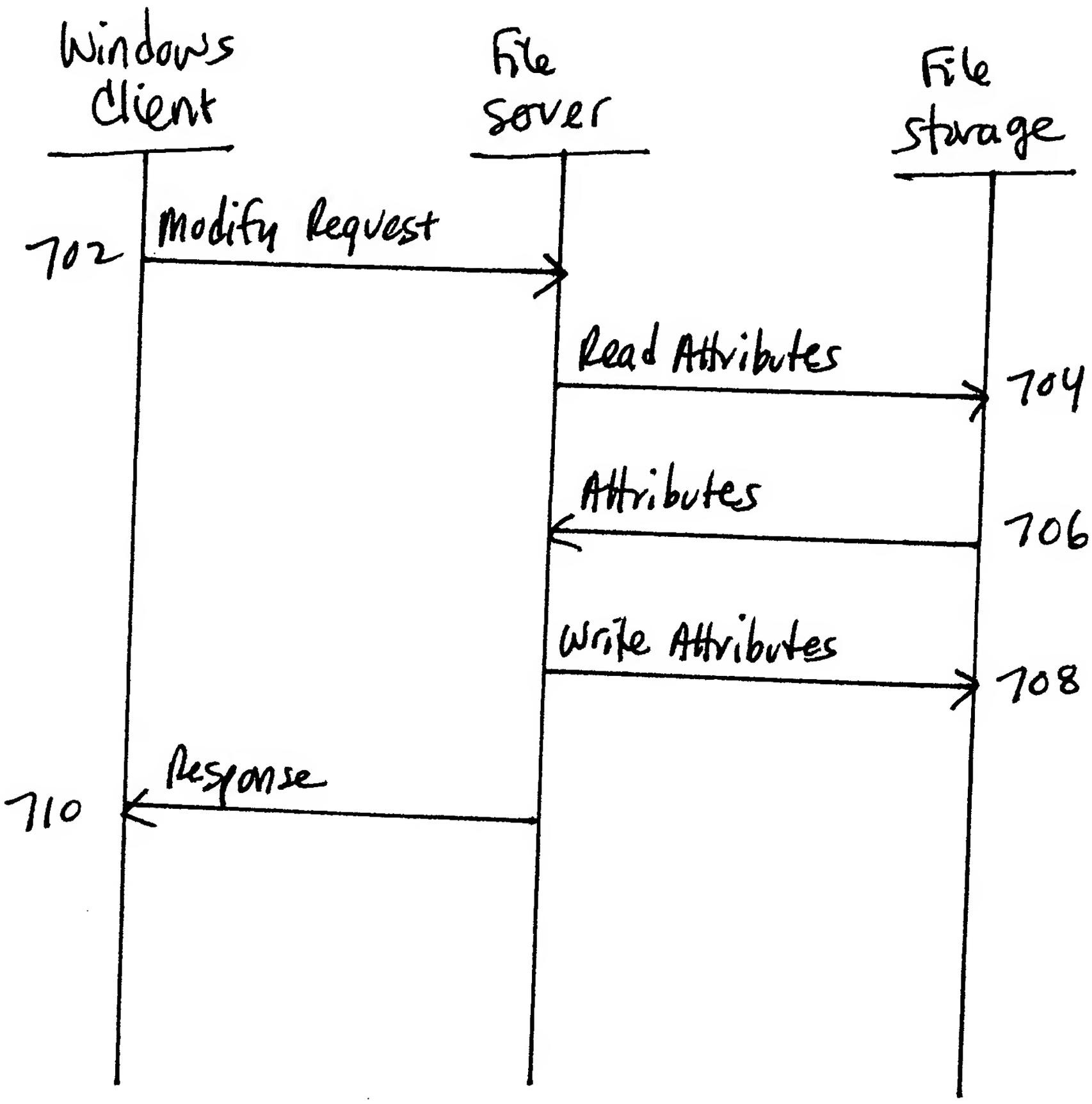
Windows Client
File Sever
File Storage
702
Modify Request
Read Attributes
704
Attributes
706
Write Attributes
708
Response
710

FIG. 7

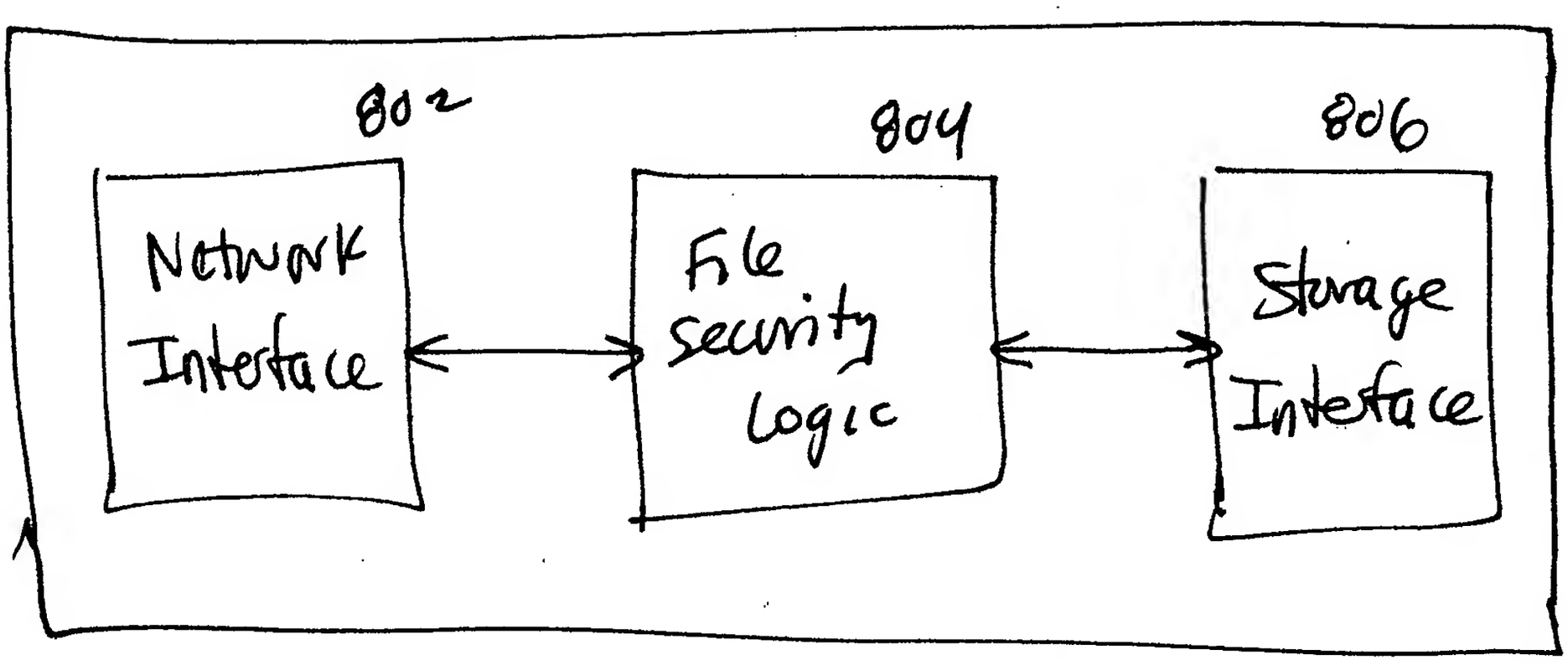
802
804
806
Network Interface
File security logic
Storage Interface

FIG. 8 160